

**Determining Optimum Sidedress Nitrogen Requirements for Cotton
Receiving preplant Application of Broiler Litter in Southwest Alabama**

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Planting Date: May 28, 2007 dusted in. Did not come up for several weeks

Harvest Date: December 1, 2007

Broiler Litter at the rate of 2 tons per acre was applied. The analysis of this litter was very good. The nutrient content of the litter was Nitrogen 3.18 %, Phosphorous 4.37 %, Potassium 2.38 %, Calcium 2.61 % and Magnesium 0.43 %. One ton of this litter delivers N 64lb., P205 87 lb and K20 48 lb. Two tons delivers N, 128 lb., P205, 174 lb., and k20, 96 lb. Costs: Broiler litter cost \$25 per ton plus \$6.00 for spreading. Total cost \$31 per ton. **Total Cost for Broiler = \$62 per acre.**

Commercial

350 lb. of 15-18-18 was applied. Cost was \$345 per ton. Cost per acre was \$60

28-0-0-6 was the sidedress fertilizer, applied at 47.5 lb of N per acre. Cost was \$245 per ton and \$21 per acre. **Total Cost for Commercial = \$81 per acre.**

Comparison	Nitrogen	Phosphorus	Potassium	Cost	Yield
Commerical	100	63	63	\$81	447.5 lb.
Broiler 2 Tons	128	174	96	\$62	-8.75
Broiler + 40 N	168	174	96	\$80	+4.75
Broiler + 80 N	208	174	96	\$97	+24.25

Table of Results of Treatments and Harvest Yields Averaged

Average Yield of each Treatments	Yield of lint cotton Adjusted at 36 % gin turn out per acre
Commercial	447.5 lb. per acre
Broiler + 0 Nitrogen	438.75
Broiler + 40 N	452.25
Broiler + 80 N	471.75

Table of Results of Treatments, Yield, Costs, Yield and Profit Comparison

Treatments	Yield at 36 % gin turn out per acre	Cost of fertilizer per acre	Yield Comparison	Profit Comparison
Commercial	447.5 lb.	\$81	447.5 lb.	
2 ton Broiler	438.75	\$62	-8.75	Highest Return
Broiler + 40 N	452.25	\$80	+4.75	2 nd Highest
Broiler + 80 N	471.75	\$97	+24	

Sponsors: Alabama Cotton Commission and Dru Rush of DeltaPine.

Results: From this study show that for growing cotton with broiler litter as the fertilizer the first year it is recommended to apply 2 tons of high analysis broiler litter within 30 days of planting and then sidedress with 40 lb of additional Nitrogen during the growing season. Research has shown that litter applied one year gives an additional yield the second year. Cotton the second year of broiler litter application typically needs only 2 tons of broiler and no additional Nitrogen. Litter also has a net liming benefit that should help reduce the need for additional lime in the future in comparison with plots that received commercial fertilizer.